Tribal Participation In U.S./Canada Pacific Salmon Treaty Implementation

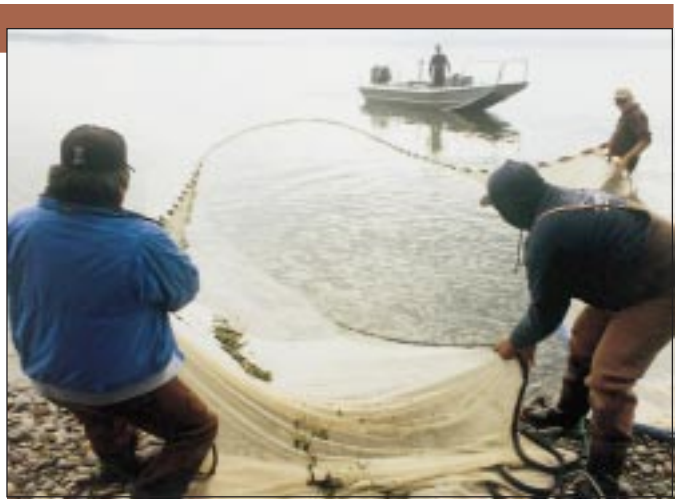
Introduction

Adult salmon returning to many western Washington streams migrate through both U.S. and Canadian waters, and are harvested by fishermen from both countries. For decades, there were no restrictions on the interception of returning salmon by fishermen of neighboring countries. Conservation goals and the right of each nation to reap the benefits of its own fisheries enhancement and restoration efforts were severely undermined as a result.

In 1985, after two decades of discussions, the Pacific Salmon Treaty (PST) was created through the cooperative efforts of the tribes, state governments, U.S. and Canadian governments, and sport and commercial fishing interests.

The Pacific Salmon Commission (PSC) was created by the United States and Canada to implement the treaty. The PSC establishes fishery and allocation regimes, develops management recommendations and is a forum for mutual fisheries issues. The PSC is governed by an eight-member bilateral body that includes representatives of tribal, state and federal governments. Three regional sub-panels composed of fisheries policy and technical representatives advise the PSC.

As co-managers of the fishery resources in western Washington, tribal implementation of the PST is critical to achieve the shared goals of the PST in protecting, sharing and restoring salmon resources. In addition to serving at the policy level on the PSC and its panels, tribal representatives also participate on the many committees and work groups which provide technical support to implement the treaty.



Skagit System Cooperative staff conduct a beach seine as part of a Pacific Salmon Treaty project to restore chinook salmon.

Policy And Process

Staff of the Northwest Indian Fisheries Commission (NWIFC) serve as regional panel advisers and, along with tribal staff, provide most of the representation for western Washington treaty tribes on the many PSC technical committees and work groups. NWIFC staff facilitate inter-tribal and inter-agency meetings, develop issue papers and analysis of strategies and negotiation options, and provide technical advice to the tribes and tribal PSC representatives.

An NWIFC policy analyst provides staff support for PSC Commissioner Wm. Ron Allen, assisting him with policy issues pertaining to the PSC process. The policy analyst also prepares briefing reports on key issues and meetings to keep concerned tribes informed.

The U.S. and Canada conducted government-to-government negotiations to secure a new long-term agreement on fishery regimes in 1998. A one-year agreement was reached with Canada regarding coho, chum, and Fraser River sockeye fisheries in the south. Negotiations were unsuccessful, however, in reaching agreement on a coastwide chinook plan and for northern fisheries. The governments of U.S. and Canada both remain committed at the highest level to achieve a long-term agreement in 1999.

Technical Implementation

NWIFC staff continued in key roles in implementation of the Pacific Salmon Treaty in FY-98 through their involvement on several committees and working groups within the PSC structure. Staff held positions as U.S. chair of the Fraser Panel Technical, and co-chair of the Joint Chum Technical Committee. Staff served on several other committees and working

groups, including the Chinook Technical Committee, the Selective Fishery Evaluation Committee, the Coho Technical Committee, and the Working Group on Mark-Recovery Statistics.

Research Projects And Data Gathering

Fisheries research is an integral part of treaty implementation. The tribes have designated a substantial portion of their PST funding to conduct the necessary research, data collection and fishery monitoring activities needed to manage salmon fisheries in the context of the PST.

Beginning in FY-90, the scope of the tribal projects was expanded to include enhancement studies. They are designed to explore the feasibility of programs intended to improve the status of stocks and fisheries. These projects involve activities such as production feasibility studies, production evaluation studies, stock enhancement programs, and habitat improvement.

Indicator Stock Tagging and Recovery Projects

Hatchery Indicator Stock Tagging And Recovery Program (NWIFC)

This program is responsible for tagging the tribal hatchery salmon stocks that are part of the coastwide PST chinook and coho exploitation indicator stock program. The intent of the program is to ensure that each wild or hatchery production stock grouping has a representative hatchery stock that is being coded wire tagged (CWT). Subsequent tag recovery information allows the PSC chinook and coho technical committees to develop fishery statistics used to monitor and evaluate the impact of fisheries on wild stocks. More than 1.5 million fish from 11 tribal hatcheries are annually tagged for the program. This includes six chinook stocks and eight coho stocks.

Wild Indicator Stock Studies

Four of the chinook tag groups are derived from wild brood-stocking efforts. Since wild chinook smolts are too sensitive to capture and tag, the intent is to mark a group that represents wild fish to the best extent possible. In these studies, wild adult chinook spawners are captured and brought into a hatchery for spawning. The subsequent progeny are incubated, reared, and coded wire tagged. After tagging, the fish are transferred to an imprinting pond adjacent the native river, where the fish are released at a size and time consistent with the juvenile wild chinook migration. These stocks are also escapement rate indicator stocks. All of these projects include spawning ground surveys to estimate escapement and carcass sampling to recover CWTs. The field work is conducted by individual tribal programs and the tagging is conducted at tribal hatcheries by the NWIFC Indicator Stock Program. These indicator stock programs include:

- Skagit River Summer Chinook Indicator Stock Study (Skagit System Cooperative)
- Stillaguamish River Native Chinook Indicator Stock Study (Stillaguamish Tribe)
- Hoko River Fall Chinook Indicator Stock Study (Makah Tribe)
- Queets River Wild Fall Chinook Indicator Stock Study (Quinault Indian Nation)

Three wild coho stocks are also part of the regional indicator stock program. One of these, the Queets River Coho Indicator Stock Study, is conducted by the Quinault Indian Nation. The purpose of this project is to establish and assess an indicator stock of naturally-produced coho salmon from the north Washington coast. Specific objectives include capturing and tagging 35,000 wild coho smolts and conducting spawning ground surveys for tag recovery and escapement estimation. Data is used to monitor and evaluate stock production, survival, and ocean and river fishery parameters of the Queets and other wild stocks from the region.

Tribal Projects: Stock Restoration Studies

Skagit River Chinook Restoration Project (Skagit System Cooperative: Upper Skagit, Swinomish and Sauk-Suiattle tribes)

This project's purpose is to develop an analytical model to evaluate proposed actions to restore Skagit River chinook. This life history model simulates chinook abundance and survival through all life stages. The project will allow thorough evaluation of harvest, habitat, and hatchery actions to achieve the PST objective of stopping chinook declines.

Dungeness Chinook Tagging Project (Jamestown S'Klallam Tribe)

A captive broodstock program was started in 1991 to save Dungeness chinook from extinction. This multi-agency program is an experimental

model for critical stock restoration and involves coded wire tagging captive broodstock offspring. Tag data will assist in assessing interception rates in all fisheries, evaluating different release strategies, and determining spawner success. This project also addresses a PST recommendation for evaluating new production concepts.

Natural Production and Habitat Assessment Studies

Natural Production Of Coho Smolts In The Queets River (Quinault Indian Nation)

The overall goal of this project is to bring together habitat and fish production data to guide enhancement actions to improve Queets River coho production. Specific objectives include analyzing habitat and production data from more than 10 years of studies in the Queets River basin; maintaining the long-term database on Queets coho production, and developing analytical tools to direct enhancement efforts in the basin. Objectives for 1998 included sampling outmigrating smolts to recover tags and estimate the smolt yield of wild coho and steelhead produced from the Queets, collecting fry abundance, size and habitat usage data from tributaries during summer low flow period, and analyzing relationships between spawner abundance, fry production and smolt production from various habitat types throughout the river system.

Oakland Bay/Hammersley Inlet Coho Production Investigation (Squaxin Island Tribe)

This study evaluates coho production from two southern Puget Sound streams, using weirs and mark/recapture methodology to count outmigrating coho smolts. Data is used to estimate natural coho production, help develop a spawner/recruit relationship, and help refine spawning escapement goals.

Nooksack River Salmon Smolt Production Study (Lummi and Nooksack Tribes)

This project's long-term goal is to quantify Nooksack River smolts. Information will be used to monitor production, harvest management and ESA recovery studies. The 1998 purpose was to determine chinook zero-age production, and collect samples for genetic analysis to identify the specific production sources in the watershed. Data is obtained with a floating screw trap, and studies were conducted to identify the correlation between trap efficiency and stream conditions.

Quillayute River Natural Coho Production Study (Quileute Tribe)

The objective of this project is to monitor and evaluate Quillayute River natural fall coho production in conjunction with ocean and terminal fisheries. Activities involve spawner estimates and fishery sampling. Data analysis from this and other projects provide wild escapement estimates, terminal and pre-terminal harvest rates, and spawner/recruit relationships.

Upper Hoh River Watershed Analysis (Hoh Tribe)

The objective of this project is to determine the overall condition of coho habitat in the Hoh River watershed, and the relative distribution and utilization of this habitat. Analysis is based on geomorphology assessments and associated instream habitat parameters. Data will be used to determine habitat vulnerability to different types of physical disturbances and to develop spawner-recruit production functions for Hoh River coho.

Spawning Escapement Evaluation Studies

Snohomish River Chinook Straying Evaluation Study (Tulalip Tribes)

This study is designed to determine the level of straying of hatchery chinook, using unique otolith (ear bone) marks. Marks are applied through controlled temperature fluctuations during the incubation stage at hatcheries in the watershed. Spawning ground surveys are conducted through other projects to recover otoliths and determine hatchery/wild components. This helps biologists assess the accuracy of naturally spawning escapement estimates used to monitor the rebuilding of Snohomish River summer/fall native chinook. Analysis of 1997 otolith sampling results show the project successfully quantified hatchery fish contribution to natural spawning areas.

East Kitsap Coho Escapement Study (Suquamish Tribe)

Fisheries managers in the south Puget Sound region are developing minimum escapement breakpoints for wild coho in local drainages. Few escapement estimates of naturally spawning coho have been conducted in Puget Sound, and this project estimates total spawner escapement of both enhanced and natural spawning components returning to seven drainages on the east Kitsap Peninsula. This provides data to determine potential fishery management constraints needed to address concerns for south Puget Sound wild coho stocks. This project will also provide estimates of the straying rate of net pen reared coho.

White River Spring Chinook Migratory Behavior Investigation (Puyallup Tribe)

In this study, adult capture and tagging is used to monitor the upstream migration of returning spring chinook salmon. Study objectives include identifying entry timing to the lower Puyallup River, monitoring migration rates and identifying the overlap in entry times between spring and fall stocks.Results of the study will be used to refine chinook harvest timing, duration and locations.

Hatchery Chinook Straying In The Nisqually Basin (Nisqually Tribe)

The Nisqually Tribe operates two chinook production facilities that annually produce more than 3 million smolts. The tribe wants to determine the extent and nature of adult hatchery chinook straying in the watershed and to what extent, if any, straying is impacting natural production. Project funding increases the labor-intensive efforts of conducting spawning ground surveys and recovering carcasses.

Chinook Spawner Surveys In Lake Washington/Green River Basins (Muckleshoot Tribe)

The objective of this project is to improve the estimation of chinook spawning in the Lake Washington and Green River basins. A secondary objective is to estimate the proportion of wild spawning hatchery chinook. This provides improved estimates of true natural escapement, which leads to better return rate estimates, rebuilding success and wild/hatchery interactions.

Development of New Methodology To Estimate Total Natural Coho Spawning Escapement In Strait Of Juan de Fuca Streams (Makah Tribe & Lower Elwha Klallam Tribe)

The objective of this project is to develop a more accurate methodology for estimating coho spawner abundance within the Strait of Juan de Fuca region. The project will assemble current data, and where needed, collect relative habitat data within all coho-bearing stream segments. This information will allow the design of a new spawning survey system that utilizes index reaches based upon habitat stratification.

Fishery Monitoring Projects

Monitoring And Sampling Of Hood Canal Commercial Coho Fisheries (Skokomish Tribe)

The pending ESA listing of Hood Canal summer chum means management actions may be needed to protect these stocks in Canadian and U.S. fisheries. This project determines run timing and incidental summer chum harvests during Hood Canal coho fisheries. Technicians collect chum tissue samples for genetic stock identification analysis and sample the fishery for coded wire tags. This will help managers more effectively regulate fisheries to protect summer chum.

Estimation Of Port Gamble S'Klallam Tribal Coho Stocks To Treaty And Non-Treaty, U.S./Canada Fisheries (Port Gamble S'Klallam Tribe)

This study involved sampling the treaty/non-treaty harvest of coho salmon in Hood Canal, Port Gamble Bay and the Strait of Juan de Fuca for coded wire tagged fish. The gathered data will be used to determine the contribution of Port Gamble net pen coho and other Hood Canal coho stocks to U.S. and Canadian fisheries. Funding also was used for analysis of this and other fishery data, which will be used to determine stock composition and timing in Hood Canal fisheries, and evaluate fishing strategies, including selective fisheries, for the region.

Habitat Improvement Projects

Stillaguamish Culvert Analysis and Repair (Stillaguamish Tribe)

The purpose of this project is to increase coho production in the Stillaguamish watershed by replacing habitat-blocking culverts. A prioritized list of projects was developed and project implementation began. Two projects were completed and three others were initiated. The culvert repair work has largely been done in cooperation with other agencies and groups. Spawning surveys are scheduled to evaluate utilization of the opened habitat.

For More Information

For more information about the natural resource management activities of the treaty Indian tribes in western Washington, contact the Northwest Indian Fisheries Commission, 6730 Martin Way E., Olympia, WA., 98516; or call (360) 438-1180. The NWIFC home page is available on the World Wide Web at: www.nwifc.wa.gov.